

# Note Taking Application

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**Abstract** — Students frequently collaborate in note-taking to increase the amount of information they retain during lectures. The encoding impact, which refers to deeper data processing as a result of taking notes, is a helpful effect of note-taking. Most educators recall taking notes as an important part of formal lecture room learning. Technological advancements like as tablet computers, mobile apps, and recorded lectures are altering lecture room dynamics and influencing how students create and review their notes. Digital notes provide low-cost, networked notes that may be incorporated in lecture materials and magnify outside the lecture room. Taking notes during lectures is a common occurrence among college students. An examination of modern technology within the classroom using cultural-historical hobby, theory and social constructivism provides educational opportunities and design difficulties. Notes are written using a virtual pen on virtual paper in an attempt to mimic traditional student note-taking as closely as possible. This research represents the advantages of overlaid notes as compared to juxtaposed notes given openly following lecture.

**Keywords**— STEM, UI, Android, Digital

## I. INTRODUCTION

Technologies, like language, are human-made and utilised tools that have collected and evolved over time. Both hardware and software tools have been developed as a result of computer science. The cultural psychology approach invites computer scientists to research how these technologies regulate human behaviour and how the introduction of new tools modifies existing mediation mechanisms. While the lecture structure has stayed virtually same

over the years, lecture presentation technology has steadily improved. With the invention of the printing press, specialists no longer had to spend large amounts of time laboriously copying precious books, but could instead travel from location to location reading the writings to the public. Around 200 years ago, the creation of blackboards enabled teachers to share text and drawings with their students, allowing them to impart visual knowledge alongside spoken information for the first time. Another breakthrough in educational technology happened roughly 50 years ago with the advent of low-cost projectors such as slide projectors and overhead projectors.

In comparison, technological advancements in student note-taking have been negligible. Individual pupils have used chisels on stone or clay tablets, pens on papyrus scrolls or parchment, and, more recently, pencils on paper to record their ideas and interpretations. To lower the amount of writing, the writing surface may be loose leaf sheets or bound in a notebook, blank or lined, part of the course textbook, or feature some background content (such as the lecture's presenting material). Even with the development of low duplicating machines such as scanners, printers, and photocopiers, which allow instructors to provide students with copies of detailed lecture notes or allow students to share their notes with one another, the archaic practise of recording and reviewing notes alone is still prevalent.

Students frequently take notes in order to increase the amount of knowledge they retain from class. The coding effect, which refers to the deeper processing of information as a result of taking notes, is one beneficial impact of taking notes. Tablets, mobile applications, and recorded lectures are altering classroom dynamics and impacting how students take and evaluate class notes. Digital note-taking offers low-cost, networked note-taking that is embedded in

course materials and goes beyond the traditional student activity of taking notes during lectures. Notes are scribbled on digital paper with a digital pen, much like students used to do.

Note-taking is a frequent practise in everyday life. People take notes in a variety of situations, and the variety of information captured is immense. Important action items or fascinating and valuable information that the note-taker wants to return to later are frequently documented. Unfortunately, human memory isn't perfect. People do not regularly examine their records, which exacerbates the situation. Previous study has found that people seldom refer back to their notes. More crucially, unlike paper notes, digital notes may be modified. They can be copied, processed, examined, segmented, reorganised, and presented in a number of ways without extra user input.

Although paper notes might be handled similarly (for example, by scanning and OCR) [13].

There are two types of memory advantages associated with taking notes [9]. On the one hand, taking notes provides long-term advantages such as having notes ready for review and rehearsal. The external storage effect of taking notes is what it's called. Students who take notes, on the other hand, get instant benefits because they participate in a higher degree of thinking. This is known as the note-taking encoding effect.

Taking notes is a fundamental learning activity that any serious secondary or postsecondary student should participate in. According to studies, the mental processing that occurs during note-taking helps pupils consolidate and retain classroom learning, even if they never examine their notes later. As students go from primary to secondary school to university, the density of knowledge offered to them will rise. Students are expected to understand and acquire more knowledge in a same length of time. To meet the increased demand on their information-processing abilities, students frequently engage in note-taking to increase the quantity of information they retain. For decades, taking notes was an analogue activity, with students using pen and paper to take notes. The increasing availability of portable

digital devices has changed the way students take notes. Longhand notes are now considered 'traditional' notes-taking, whereas typing is a more modern form of notes-taking. Noted is a note-taking tool for individuals of all ages. Carrying a notebook around is exhausting and adds weight. With the note-taking software that converts your device into virtual paper, you can take beautiful, searchable handwritten notes.

What is the purpose of taking notes?

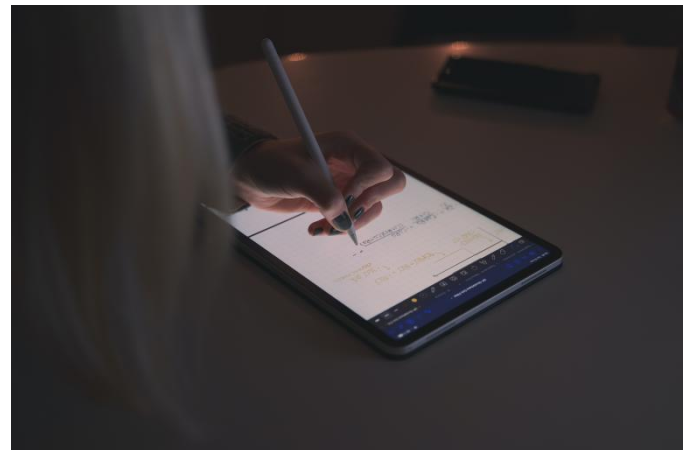
Many studies contend that (1) taking notes is a process of encoding information during a lecture, and (2) the resulting notes are a product that retains knowledge for later review [9]. Both encoding and storing functions, according to experts, are equally significant and contribute to academic accomplishment [10]. Both note-taking functions help with (1) memory and recall, (2) comprehending the arrangement and structure of items given, (3) recognising essential information, and (4) keeping attention. [11]

The significance of taking notes is discussed in terms of two primary tasks [10]. The first misunderstanding is that taking notes makes learning easier (which is known as the encoding hypothesis). It might include things like increasing students' attention, increasing their awareness of text arrangement, retaining material in memory, and prompting the learner to create a comparison between the content and what they've already learned. This approach emphasises the process functions of note-taking. The second idea, the external storage hypothesis, is connected to the purpose of note-taking. It's also crucial since the notes (i.e., the goods) serve as an external data store that may be accessed in the case of a delayed recall. Taking notes keeps your mind and body engaged, reducing thoughts of tiredness or distraction. Keep your mind active by paying attention to what you're hearing if you want to learn more about what you hear. Listening closely and writing down what you hear keeps your mind engaged with what you're hearing[7].

There is a link between taking notes and being creative. Creativity isn't some supernatural skill; it's about having a lot of ideas and combining the finest ones. In the realm of creation, there is a lot of effort to be done, but there is no such thing as a 'magic formula.' Where do you keep track of and develop out these concepts? Notes. Taking notes is not just required for college students; it is also a valuable life skill. If you can take good notes, whether you are a student, writer, or entrepreneur, you will be more effective in attaining your goals [6].

What is a note taking application ?

Note-taking is the process of gathering information from a source or event. This is often accomplished by the use of recording, writing, scribbling, paraphrasing, sketching, labelling, outlining, and annotating. Users using note-taking applications may type, scrawl, and draw on their smartphones in the same way as they would on paper. Many applications offer unique features, storage, organising, and sharing capabilities, and it is up to the user to decide which note-taking software is most suited to their needs. Handwritten letters are, without a doubt, a labour of love. It is possible that handwriting notes will take twice as long. You may take beautiful, searchable handwritten notes with the note-taking programme that turns your computer into digital paper. You may take notes on it at any time and from any location by using your phone or tablet. This will also allow you to personalise your notes. It digitally stores all vital notes and information, preferably in a cloud-based storage system. Notes may be typed, scribbled, and drawn on the device of choice in the same manner as a pen and paper would. You may incorporate files, videos, and live recordings to enrich the content and context of your notes. Note-taking applications may also collaborate and share notes with others in real time.



[19]

How does it work ?

The user will be able to access the apps using the device of their choice, most commonly a laptop or tablet. Some note-taking apps are cross-platform and available on a variety of devices, whilst others may be limited to a particular platform or device. For example, Notability is only available in Apple products, although OneNote touts its availability across all platforms and devices [14][15]. Each programme has its own set of characteristics that may limit (or exceed) its usefulness in specific situations. For example, a STEM student taking notes in class will have different requirements than an employee taking notes at a business meeting [12]. As a result, the STEM student may choose an application with extensive handwriting tools and equation editors, and may decide to invest in a computer. The STEM student may additionally desire separators and subcategories in the application to assist them organise their courses or projects. The employee, on the other hand, may prefer a simpler interface to count minutes on a laptop, and the number of projects will determine the level of classification and divisions needed.

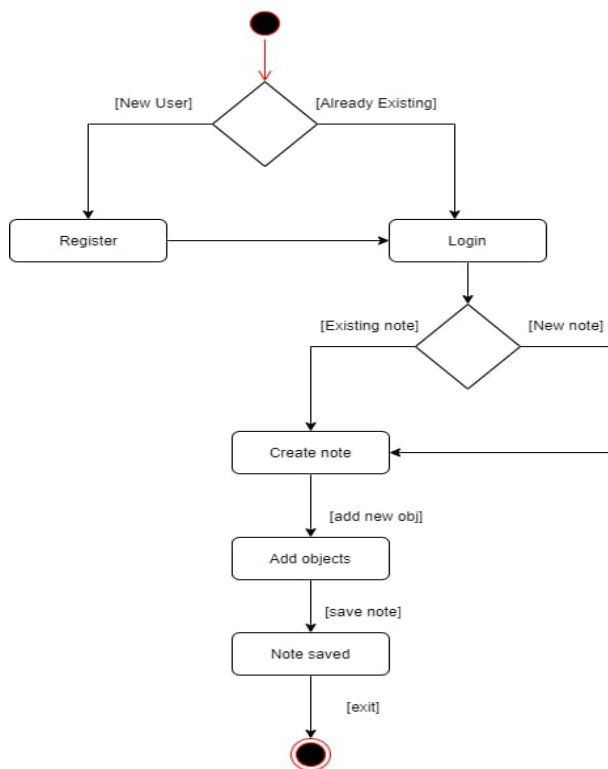


Fig. : Flowchart of Note taking in an app

We explain our research in this article, which intends to create a portable Tablet-smart phone-based Note-Taker that students may carry from class to class without lecturers needing to change their lectures in any way.

## II. LITERATURE SURVEY

- I. Masanobu Numazawa, Masato Noto, "The effect of education and learning using note-taking application", Systems Man and Cybernetics (SMC) 2016 IEEE International Conference on, pp. 000844-000848, 2016 - There are two parts to this review. The first section summarises four lines of study on the encoding effect: 1) manipulation of the lecture material, 2) manipulation of the method of note-taking, 3) the importance of individual differences, and 4) the testing procedure used in the empirical studies.[1]

- II. R Sandanalakshmi, P Abinaya Viji, M Kiruthiga, M Manjari, M SharinaarXiv preprint arXiv:1307.5736, 2013 - They developed a mobile speech-to-text conversion system that is both efficient and effective. Because the zero-crossing rate is utilised to discriminate between noise and speech, it calculates the energy of the high frequency component separately. As a result, the suggested technology can be used to construct real-time applications that do not rely on speakers, such as mobile phones.[2]
- III. Aragón-Mendizábal, E., Delgado-Casas, C., Navarro-Guzmán, J.-I., Menacho-Jiménez, I., & Romero-Oliva, M.-F. (2016) - A comparison of handwriting and computer typing in university students' note-taking. - Comunicar, vol. 24, no. 48, pp. 101–107. Through a mixed method study that includes 31 focus groups and a survey of 7,217 adolescents aged 12 to 18 in Chile, this study evaluates the influence of studying with handwritten notes, WhatsApp, YouTube, and browsing the Internet on academic performance [3][17][18].

## III. PROPOSED SYSTEM

The Noted application is a basic note-taking application that aims to have a simple UI while maintaining smart behaviour. The idea was inspired by the lack of such programmes compatible with older phones and Android versions [16]. It strives to give an appealing appearance while keeping to the most recent design principles of the Google operating system.

Modules to be included in the proposed system

- New
- Sort
- Save
- Delete
- Undo
- Share
- Speech to text module

#### - New

A button for making a new note is available in the noted programme. This note includes the note's title as well as its contents. It also has a menu within it for various functions.

#### - Sort

Noted has a sort option for sorting through your list of notes. You can arrange these notes alphabetically or chronologically.

#### - Save

Your note is instantly kept in your application when you create it. It will remain in your app unless you decide to remove it.

#### - Delete

There is a menu within a note where you may discover several functions. A delete function is one of them. If you no longer require the note and wish to erase it, use the delete button. It immediately deletes the note from the app.

#### - Speech-to-text

The note has a speech-to-text capability. Speech-to-text refers to the process of capturing voice input and translating it to written representation. This feature makes taking notes considerably easy and quick.

### Applications

The following are some real-time applications of Note taking application :

#### - Note-taking in Academics:

Taking accurate notes in magnificence is a prime part of instructional fulfillment in college. Actively taking notes all through magnificence permit you to recognition and higher recognize essential concepts.

Good note-taking will enhance your lively listening, comprehension of material, and retention [8].

#### - Note-taking for commercial and other purposes:

In the workplace, maximum professional personnel will analyse that powerful note-taking remains useful. Effective note-taking abilities assist you to think quickly on your feet. It's certainly important for tracking the deadlines with accuracy. In many workplaces, notes come to be legitimate documents. For non-profits, board assembly notes keep valid weight. Properly documenting records is important to every person worried in a legitimate case – from law enforcement officials to courtroom docket journalists and every person in between [8].

In software program development, accurate documenting necessities and regulations is required for constructing a a meaningful product. The whole activity of a Software Systems Analyst is to properly file or take notes in a lot of approaches to facilitate clean and correct the link among software program builders and a specific business.

### Advantages

1. Note taking can promote learning both internally (also known as encoding, which states that students learn when they process information they hear or see and translate it into their own words) and externally (also known as decoding, which states that students learn when they process information they hear or see and translate it into their own words) (also known as artifact, which means the student will be able to review their notes at a future time and augment their exposure to the material)
2. Note-taking enables learners to comprehend new knowledge faster and more deeply than they would if they were to experience it, and reviewing notes leads to better recollection of the material.



3. Never worry about losing your notes again .
4. Always have your notes with you at all times and never run out of new pages.
5. Organise and search for important information
6. Saves the environment
7. Everything is in one location.
8. Everything may be found within a search
9. Everything may be shared.

#### IV. CONCLUSIONS

This gives an overall view of several useful ways for taking notes more successfully and precisely during lectures, as well as measuring how much material we retain afterward. Effective note-taking is an important educational skill that helps you concentrate, stimulates your memory, and helps you stay organised. By converting handwriting into textual content in the application, the application will improve the way traditional notes are created digitally. So, rather than sitting with a pen and paper to take notes, we can do so digitally.

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